

MUSEUM STORIES FOR CHILDREN

Presented by

*The James Nelson and Anna Louise Raymond Foundation
for Public School and Children's Lectures*



Series XXIX, Number 1

October 2, 1937

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

112265

THE GIANT PANDA

Less than ten years ago two adventurous Americans decided to go on a hunting trip to Western China and Tibet. They intended to hunt the rare giant panda, but they had so little hope of getting one that they kept the object of their hunt a secret. This was not the first time these two adventurers, Theodore and Kermit Roosevelt, had traveled in Tibet, so they bore no hard feelings when the natives scratched their ears and stuck their tongues out at them. They knew that was just a friendly Tibetan greeting.

When the expedition reached the 'panda country' they had to depend upon the natives to help them. They offered cheap field glasses and small flashlights to the hunters first sighting a panda. They had thirteen hunters, but only three of them had ever seen a panda.

One day, while the hunting party was in a dense bamboo forest, the hunters heard a clicking chirp, and there not thirty yards away was a giant panda, crawling out of a hollow at the base of a huge spruce tree. He was just waking up and moved sleepily into the open. He appeared very large and unreal to the hunters. The Roosevelts both fired, slaying the first giant panda known to have been killed by white men.

Since that expedition others have gone in search of the giant panda. Some of these hunters have been successful. All those who have seen a live giant panda describe it as more like an imaginary animal than a live beast, probably because they had so often dreamed of the panda, but never really expected to see one.

The giant panda lives in the bamboo forests of a mountainous land. There are almost no flat spots in this beautiful and utterly wild country. The hunters in Tibet and Western China frequently follow the stream beds since it is almost impossible to break through the dense bamboo thickets.

The first report of a giant panda was made nearly seventy years ago by Père David, French missionary scientist. He did not, however, see a live panda, but merely the skins belonging to natives. He thought the animal was a kind of bear. Scientists later placed the pandas in a separate family more closely related to the raccoons than the true bears. The giant panda's family tree has its roots 'way down in the Old Stone Age, perhaps a million years ago.

A full-grown giant panda weighs about two hundred and fifty pounds. It looks much like a bear being nearly the same size and shape,

though unlike the bear it does not hibernate during the winter. The color pattern, too, differs greatly from that of the bears. The band of black over its shoulders, black legs, black ears and black spectacles around its eyes give it a somewhat clownish appearance. The rest of the body is creamy white. The hair is long and glossy, and there is a woolly undercoat beneath the long hair. Occasionally the natives use the skins as sleeping mats since the hair is thick and springy. The giant panda walks stiff-legged and never seems to be in a hurry, though it climbs quickly and easily. Its nest of broken stalks and leaves is usually made at the foot of a tree, or in a hollow log. The giant pandas appear to be rather stupid animals. Perhaps this is because they seldom have to use their wits in seeking food, living almost entirely upon the bamboo that grows all about them. Their teeth are well suited for tearing and grinding the tough bamboo stalks.

Of course you have heard of the baby giant panda, Su-lin, the first living giant panda to be brought out of its native country. When she was found, on November 9, 1936, she was about six weeks old; her eyes were still closed and she weighed only three pounds. Mrs. Harkness, who brought her to the United States, called her 'Su-lin,' meaning 'a little bit of something precious.' Reports tell us she was found in a hollow log, left there by her mother who was frightened away. At that time Su-lin looked for all the world like a little toy bear. When she was about four months old she was fed some bamboo, but strangely enough she refused to eat it; she preferred cereal, milk, and strained vegetables. By the time she was nine months old and weighed about sixty pounds she had developed a liking for leafy grasses, carrots, celery, and spinach.

Ten years ago few people had even heard of a giant panda. Today, thousands have seen both mounted pandas and lively little Su-lin.

VELMA D. WHIPPLE, Guide-lecturer.

Note: The habitat case in Hall 17, containing the first giant panda known to have been killed by white man, gives you a good idea of the 'panda country.'

Save your Museum Stories. You will find them useful for looking up things you may want to know.

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Nov., Dec., Jan., Feb., Mar.	-	-	9 A.M. to 4:30 P.M.
Sundays, Nov. 1-Mar. 31	-	-	9 A.M. to 5:00 P.M.
April, September, October	-	-	9 A.M. to 5:00 P.M.
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CLIFFORD C. GREGG, Acting Director

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Series XXIX, Number 2

October 9, 1937

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

“SEA RIVERS”

Ocean currents are really giant rivers that flow in the oceans. They are wider and deeper than any river on land. Some people say they are caused by the wind; others say they are caused by the rotation of the earth, or that the shape of the land forces the water around. Probably they are caused by a combination of all these things, along with the influence of the sun and the saltiness of the water. A great deal of experimenting has been done with ocean currents, and as a result we have today maps that tell us just where they flow and how fast they travel.

One of the best known currents, the Gulf Stream, flows very slowly in the Caribbean Sea, and then, as it turns north it picks up speed until off Miami it flows along at about four miles an hour. It flows north and east to Newfoundland where it meets the cold Labrador Current. The meeting of these “sea rivers” causes heavy fogs off the Newfoundland coast. The Gulf Stream continues east to northern Europe where the winds blowing over the warm current carry warmth to the land. Thus, England, which is as far north as Labrador, has a very mild climate.

The Japanese Current is the warm stream of the Pacific, and gives Washington and Oregon a climate much like that of the British Isles.

The early explorers knew little of ocean currents and the advantages of sailing with them. Sometimes they were actually handicapped by these “sea rivers.” Columbus, on his first journey, crossed a part of the Atlantic where there were no currents, and then sailed against the Gulf Stream. Later, when Ponce de Leon was searching for the “Fountain of Youth,” he found that although he had a heavy wind to help him on his journey along the coast of Florida, the current was so strong that the vessels scarcely moved.

Gradually other navigators discovered the Florida Current but they selfishly kept the knowledge to themselves. Then Benjamin Franklin noticed that American vessels sailing from England arrived in America two weeks earlier than British ships. This was because the American captains knew the Gulf Stream flowed in a huge circle; they followed it southward to the Canary Islands, then sailed due west and finally northwest, taking advantage of the current all the way. The English captains, following the shorter northern route unknowingly sailed against the current.

“ ’Tis advertised in Boston, New York, and Buffalo,
Five hundred brave Americans, a-whaling for to go—”

So runs an old sea chantey—and it was those brave whalers who first gained an accurate knowledge of the Gulf Stream. Whaling was an adventurous occupation, and to go whaling was “to see the world.” It attracted bold young men who received excellent training in seamanship. It was their courage, skill, and curiosity that led them north through the fogs of Newfoundland, and urged them to investigate the waters in which they sailed.

Though the current itself does not hinder the progress of our modern ships very much, the icebergs carried by the currents and winds are a real danger. These ’bergs originate in Greenland, and are carried southward by the cold Labrador Current until they meet the warm Gulf Stream. This is off the Newfoundland coast where heavy fogs blanket the sea. There are two United States coast-guard cutters constantly on guard in the danger zone in the spring. These cutters broadcast the position of every dangerous iceberg. This service is supported by the United States, Canada, and twelve northern European countries.

The Sargasso Sea is a region in the middle of the Atlantic where there are no currents. Great masses of the delicate Sargasso weed grow in this sea. The Sargasso Sea was known long before Columbus sailed the Atlantic and strange tales were told of sea monsters, and weeds that held ships fast. No one has been able to prove the stories of the monsters, but the seaweed tales were probably due to the ignorance of the sailors who did not realize that it was not the weeds that held them fast, but a lack of wind and current.

If you look in your geographies you will find maps of these “sea rivers” with arrows showing the directions in which they flow.

VELMA D. WHIPPLE, Guide-lecturer.

Note: In the east half of Hall 18 are many of the fish and invertebrates found in the Sargasso Sea, as well as those found in the West Indian waters where Columbus anchored. In Hall 29 are seaweeds that grow in the ocean currents.

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CLIFFORD C. GREGG, Acting Director

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Series XXIX, Number 3

October 16, 1937

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

FROM GLOW-WORM TO FIREFLY

Oh, what fun, some warm evening in late May or June, to watch the fireflies or "lightning bugs" as they flit hither and yon! Whether we visit the river bank, the meadow or sweet-smelling woods, they are there to thrill us with their glowing lamps.

They really are not flies, or bugs—just beetles. The Greeks of old knew them, watched their flashes, and called them "Lampyris" from their word "to shine." Look carefully at the name they gave them and find a word which has to do with the lights in our own homes.

There are about 1,500 kinds of fireflies; 230 different kinds in our country. Some fly only during the day. You should have no difficulty in recognizing one you may see on a goldenrod plant, as the wings of fireflies never fit closely to the body as in the case of other beetles. And you may even see one flash its light while the sun is shining. Some have no lights to flash.

The common fireflies of the night may send their flashes from the grass, or from the upper air. The young, inexperienced nightbirds sometimes follow fireflies, but they never catch more than one. Evidently, there is an unpleasant taste, for most birds and the bats leave them alone.

The egg of our firefly beetle hatches into a caterpillar, or larva, under a rubbish heap, back of some bark, or in decaying wood. The larva is long, flattened, and of a tough, leathery texture. Sometimes, it wears a coat of short hairs; at other times, none are present. It has sharp, slender projecting jaws for seizing its prey for which it lies in wait. A dinner may consist of small earthworms, larvae of other beetles or even snails.

The larva of the firefly is known as "wire-worm" or "glow-worm" and it too has the power of flashing light of a strong greenish color. Each segment of the body is covered with a horny brown plate which has a straight white line through the middle and a slightly curved white line on either side of the straight line. The sides of the larva's body are soft and rose-colored. Look for the tiny breathing pores with white entrances against little oval brown patches. The head may be pulled back under the first segment when you go close to it. This is the way it protects that very important part of its body. Also be sure to see the proleg at the end of the body, for this little foot with

its fan-shape is an excellent brush with which to clean a dirty head or face, as well as a help in crawling.

When full-grown, the caterpillar makes a thin, oval cell in the ground and begins its pupa stage. The pupa also has the power of giving light, but it is rather feeble. About ten days after entering the cell, the cell skin bursts and out comes the adult firefly ready to thrill us with its flashing lights.

The "phosphorescence" or power of giving light, has never been well understood. We know that the common firefly has patches of fatty tissue under the leathery covering of the segments and that this fat is full of nerves and air tubes. The firefly can take in air and make a brilliant light whenever it wishes, or it can take in air and not flash. Some kinds seem always to flash in series, while others blink the same way each time. For a while it was thought the light came from phosphorus in the bodies, but now we know that is not so. So it is better to use the word "luminescence" which means "to light up."

There are many interesting kinds of fireflies. Europe, North America and even our own Chicago vicinity has one kind where the mother always stays in the larva stage with feeble antennae and legs, only simple eyes and no wings. But she has powerful lights with which to signal to her mate flying freely above. Mexico and South America have some large brilliant fireflies related to our click beetles. One is known as the "cucujo" and is caught by the natives who keep it in a box, feed it with sugar cane and bathe it with tepid water. When festivals come the young ladies wear the cucujos in their hair, or on their gowns, where they sparkle like gems. In some parts of South America are found the "railway beetles" which flash red lights from the ends of their bodies and green lights from the sides of the bodies.

Why not hunt for firefly eggs, larvae and pupae, and learn the complete story of this interesting beetle? So little is known about the various stages the scientists would welcome your assistance.

MARGARET M. CORNELL, Guide-lecturer

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Series XXIX, Number 4
October 23, 1937

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

THE STORY OF GRASSES

Grasses are the most common of all our plants. They not only include the common varieties of pasture and lawn grasses but many important plants such as cereals, sugar cane and even bamboos. Wheat, corn and rice are the most familiar grasses in the world. No wonder this great grass family is considered the most useful to man.

Members of this famous family have jointed stems with leaves placed alternately in two ranks. The flowers are almost always inconspicuous, but if observed under a magnifying glass they become tremendously interesting; some are grotesque, others are dainty and graceful while still others take on real beauty.

At one time, perhaps seventy or eighty million years ago, grasses were rare; only a few sprouted on the plains. Gradually, however, they began to thrive and spread their stems and roots underground and their seeds were carried until the plains were changed into a vast grassland. The little three-toed horses and the slender camels grazed on these grassy plains and life was peaceful for them until a sabretoothed tiger or a wolf crept close, making the tiny horses and the camels disappear in a whirl of speed.

How prehistoric man first learned that the seeds of various grasses were useful as food is unknown. But the early people used the seeds and they later learned to plant them and raise their own grain. Thus began agriculture, and all of this took place before the dawn of history. Within our own historical period we find in Mesopotamia remains of an ancient grass seed, wheat, which is at least 5,500 years old. In Egyptian tombs wheat has been discovered which was raised about 2600 B.C.

And so we come to our present age with the grasses distributed throughout the world—from the north to the south, from sea level to Alpine regions, in the tropical rain forests and in the deserts. Our grasses vary in size from less than an inch in height to the giant bamboos stretching up over one hundred feet. The grass may be stiff and erect, creeping, or climbing like the graceful, trailing bamboos in the American tropics.

Grasses have a variety of uses today. Acres and acres of rolling plains in Russia, North America, South America and Australia form natural grazing lands for thousands of animals. The most important of our food plants—the cereals, such as wheat, oats, rye, corn, barley and rice—are grasses which give us our daily bread. Sugar cane is a

grass which is one of the two main sources for sugar. Many kinds of brushes, brooms, baskets, mats and hats are made of grasses according to their flexibility.

The bamboos, giants of all grasses and most primitive, are of great importance to the millions of people in China, Japan, India and Malaysia. The large, strong bamboo stems are formed into the frameworks of the buildings while the sides are made of split and flattened bamboo stems. Furniture and utensils are often made of bamboo and the young sprouts are made into a delicious bamboo-sprout soup and chop suey.

Besides all these uses and values, grasses play another important part which has usually been overlooked. As the grasses grow, their roots and stems form a network or mat which binds the soil and makes firm sod; this holds the moisture in the earth and keeps the winds from blowing the soil. Not so many years ago, hundreds of acres of original grassland in our western plains region were needlessly ploughed up so that the farmers might raise more crops. No one stopped to consider what would happen if a long dry spell or drought should occur. When the rains did not come in the spring and summer of 1934, '35, and '36 the crops would not grow and the bare, loose soil was as dry and fine as powder; there was no protecting mass of grass to hold it so the winds swept across the hot, dry plains and whirled the dirt in great clouds for hundreds of miles, causing the well-known dust storms.

Had at least a part of the fields been left covered with grass, probably the results would not have been so disastrous. Perhaps in the future many of these barren lands will again be covered with grasses, some erect and stiff, others short and soft like a carpet and still others tall, willow and graceful in the wind.

MIRIAM WOOD, Guide-lecturer

Note: Exhibits of cereals and sugar cane are in Hall 25. In Hall 29 you may see a group of tall grasses from different countries. Hall 28 has the bamboos, brushes, baskets, mats and hats. In Hall 38 the wall paintings show the prehistoric grasslands and the grazing animals.

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FIELD MUSEUM OF
NATURAL HISTORY



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FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

THE COMMON NEWT OR RED EFT

Peeping through the mass of twisted grass in the pond I found a little creature about two inches long. I knew at once that he was the little newt for which I had been hunting. He was olive-green with rows of black-rimmed scarlet spots down his back and black spots on the under side of his body. He is different from all other salamanders. His long, vertically flattened tail waved gracefully back and forth as it propelled him through the water. He was so tiny and his gill slits were so small that I knew he could be no more than a few weeks old. I thought of the curious changes through which he must pass before he could become a full grown newt. I think you would like to know his life history.

The mother newt carefully places a tiny, jelly-like egg on the leaf or stem of a water plant and by the skillful use of her feet she twists or folds a portion of leaf around the egg. There it is held by the sticky covering that encloses it. In some twenty days, or longer, the baby newt larva or "tadpole" comes out of the egg. It is only about a quarter of an inch long—just a nice, juicy bite for some hungry fish. If it escapes such a fate it will attach itself to some leaf or stem or stone by two little "holders." Opening its toothless, hungry mouth repeatedly, it will catch and feed upon bits of plant and animal matter that floats past.

On each side of the neck of the newt larva are tiny gill-slits through which it breathes, as does a fish. On the under side of its little body are knobs from which the front legs will soon appear. Should the little fellow get a part of his tail or leg bitten off he can grow new parts. In three weeks' time there is considerable change in his appearance; his front legs will be well developed, his gills will be so branched that they will have a fringed appearance and his "holders" will have disappeared. Sometime later his hind legs will begin to sprout, the four toes of each front foot will appear and the gill fringes will begin to disappear. As they are absorbed into the body his lungs will begin to develop.

When the newt larva is three or four months old he is ready to leave the water and live upon the land. His color changes to a bright red and he is often called a "red eft." For about two and a half years he lives under logs or stones on a wooded hillside not too far from the water, eating insects and grubs which he finds in that moist, earthy home.

When full grown the newt will be about four inches long. Then, he seems to feel the urge to return to the water and without any difficulty

finds his way to some quiet pond. In some mysterious way he again lives in the water, breathing quite as well as in his early life when he had gills. His color changes back to olive-green above and to buff below, only the red spots remaining as a reminder of the red eft stage. A ridge develops along his tail and makes it a fin-like organ which will propel him through the water where he will live the rest of his life. His food will be tiny insects and occasionally, when he sheds his skin, he will not be above swallowing that.

Strangely enough the newt does not always follow the regular plan of growing as described above. Sometimes he leaves out the red eft stage altogether. In that case he just climbs up on some floating trash while he changes from the larval stage to the adult form and he may keep traces of his gills for the rest of his life. No one knows the reason for this, but there are several of the salamanders that never completely change from the larval form. The mud-puppy of the Chicago region retains his bright red gills all of his life. The Axolotl of the warm lakes of Mexico never passes beyond the larval stage. The Tiger and Spotted salamanders of the Chicago region pass through the larval stage and become gill-less adult forms before they get out on the land to live the remainder of their lives.

The newt and other salamanders belong to a class of animals known as Amphibians. They are of ancient origin; that is, they began living on earth in prehistoric times. In the ages since then, some have changed their forms, or have entirely disappeared, but the newt seems to live on in its own quiet way much as did its ancestors of long ago. All amphibians are so interesting that you will want to know more about them.

LEOTA GREGORY THOMAS, Guide-lecturer

Note: In the west end of Hall 18 there are mounted specimens of reptiles and amphibians. Among the cases of amphibians there is one in which you may find the Western Newt and several of the other salamanders.

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Series XXIX, Number 6
November 6, 1937

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

BLOW-GUNS AND THEIR USERS

The blow-gun, blow-tube, or blow-pipe is a weapon in the shape of a long tube for the shooting of arrows, darts or clay bullets. In some lands, it is merely a toy; in others, it is used for securing fish, birds and small animals. In only a few regions is it a weapon of warfare today.

Blow-guns vary in length from the two-foot blow-pipe of the Kikis of Assam, used for shooting rats, to blow-guns so long they must rest upon supports when in use. The common length is six to ten feet, but twenty-foot tubes are used.

The weapons may be single, double or triple barreled. The first kind is made from reeds or bamboos from which the pith has been removed, or from hard wood cylinders whose centers have been chiseled out with long rods, or burned out with hot irons. The double barreled form has one tube inside another with wax or gum between to keep the tubes from slipping. Where long guns are needed and materials are scarce, several sections are fitted together and bound with grass, cords, strips of rattan or membranes of animals.

The chief blow-gun users are found among the Indians of South America, the inhabitants of Malay and Borneo and some of the Philippine Islands. There are scattered groups elsewhere. For instance, the only people of Melanesia who use blow-guns are found in southern New Britain. Their tube is so long that the Museum had to disjoint it to get it into the case, and the arrows used with it are four feet long.

As with a boy's wad-shooter, it is the sudden release of compressed air from the lungs and mouth that sends the arrows, darts or clay bullets forward with force sufficient to hit a bird one hundred yards away. To hold the air at the bottom, or butt of the gun, it is necessary to completely close off a space a short distance above the opening. This is done by wrapping the darts with fluff, feathers, wild cotton, or other plant fibers, or by inserting the larger ends of the darts into paper, pith or wood cones. The wrapping of the darts is known as "feathering." The Iroquois Indians "feather" their blow-gun darts with thistle-down.

The arrows or darts usually are rather small, short and slender. Stiff grass stems, midribs of palms, bamboo and splinters are choice materials. The points must be carefully made. Acouti teeth or pirai jawbone knives are used by some South American hunters, and are frequently carried fastened to the quiver which holds the poisoned darts, tips down. Some darts carry triangular tips; some have metal

tips. Poisoned darts have the shaft cut just below the part that carries the poison, so the tip will break off in the flesh of the animal shot. The poison usually causes the heart action to stop, but does not injure the meat. The "curare" of the Guiana Indians and the "ipoh" of the Malaysians are the most rapid poisons used on blow-gun darts.

Sometimes, the blow-guns are very highly ornamented, and have separate mouth pieces that fit tightly into the butt of the gun; others have pieces shaped like half-spools that fit snugly over the butt. The Japanese make one that is like a tiny trumpet. It is inserted into the side of the blow-gun a few inches above the opening. After the dart has been pushed above this, the butt is tightly plugged. The darts are small slivers of wood set in paper cones to hold the breath that will send them far from the hunter. The blow-guns used are wound with many layers of heavy paper to make them absolutely air-tight.

The equipment of a blow-gun hunter includes quivers, containers for the poisons, gourds or boxes for the "feathering" materials, sharpeners and spatulas, and should the hunter use a spear-head lashed to the muzzle of the gun, as do the Dyaks of Borneo, then there must also be a spear-head cover.

As each part of the equipment takes time to make and decorate, the hunter is apt to be very proud of his blow-gun and to boast of its lightness and accuracy.

MARGARET M. CORNELL, Guide-lecturer

Note: Blow-guns, arrows, darts, quivers, poisons and containers may be seen in Halls 4, 9, A, E, G and H. Case 43, Hall G, has two blow-guns that belonged to the Sultan of Bandjermassin of Borneo. In Hall 3 is a full-size figure of a Semang pigmy with his blow-gun and quiver, and the head of a Sakai pigmy, the most famous of blow-gun makers. Case 6, in Hall 9, shows guns, jars of poisons and cures. Case 3, Hall H, has a Philippine blow-gun covered with carabao membrane and the carabao horn moulds for the shaping of clay bullets. Hall 4 shows an Iroquois gun "feathered" with thistle-down.

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Series XXIX, Number 7

November 13, 1937

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

GLIMPSES OF SAMOA

To many people Samoa is a bit of fairyland in the South Seas. True, it is very tiny, it is very beautiful and its people are very gentle and courteous, and have become famous in story and song.

The Samoan Islands are over a week's journey from Hawaii. Savaii and Upolu, the two largest islands, are governed by New Zealand, while Tutuila and Manua, and a few smaller islands belong to the United States. In all, there are fourteen islands with a total area of 1,700 square miles, less than our state of Delaware.

The islands are really tops of volcano-mountains resting on the ocean floor. Most of them have collar-like coral reefs separated from the mainland by lagoons. These are quiet waters in which the small boys may learn to handle their fathers' light, delicate sea-going "pao pao," or canoe, and the girls may search for shellfish and crabs. The reefs are inhabited by millions of brilliantly-colored fishes that dart or glide in and out of the living corals. Samoa is noted for its great number of weirdly-shaped and gaily-colored fishes. The people are expert fishermen and make use of spears, nets, hooks and poisons. For the securing of sharks, of whose meat they are very fond, they use rope lassos.

Along the lagoons are the villages consisting of both long and round houses with high-pitched roofs. These are supported by beams and posts of breadfruit wood, and reach to within four or five feet of the ground. Between the posts are beautiful screens, but these are never lowered except in storm or wind. Hurricanes often visit the villages, and then it is sometimes necessary for the people to sit upon the thatched roofs of their houses to prevent their being blown away.

About the villages grow tall, feathery coconut-palms and masses of brilliant flowers. The houses and grounds are kept spotlessly clean. Here the coconuts are made into copra for export, the kava mashed for ceremonial drinks, the bark of the paper mulberry beaten for the tapa cloth, and the prized Samoan mats plaited.

The mats of Samoa are used in place of money. The wood for a house may cost as much as twenty-five fine mats, a carpenter will be paid in mats, and a child may take a fine mat to a neighbor in exchange for a pig. Some mats even have names and are plaited from pandanus fibers that have been bleached and baked and scraped until as fine as linen. Such mats are worn as clothing and are presented to brides and

handed down from one generation to the next, just as we do some precious jewelry.

The Samoan loves his cane and taro patches back of the villages, the rushing waterfalls that tumble down the steep cliffs, and the jungle-covered hills of his land and will not sell any of it. In fact, the islands have laws protecting the people and their lands. With few exceptions the land is owned by the same families generation after generation. A Samoan man is extremely proud of his family and his village chief. Whatever he does is for them, not for himself. Should his garden provide more than his household needs, the extra amount is turned into the village reserve for the use of all.

Children in Samoa never brag of what they have or are able to do. To do so means punishment. They are happy youngsters, running errands and playing games that imitate the work of the grownups. Even the smallest child has some task suited to its age and power to do. Thus they are soon able to care for themselves. Sometimes, a child lives part of the time with an uncle or aunt, or some other relation, and part of the time with its parents.

Samoa households often number as many as fifty persons, all blood kin. In charge of the group is the headman, or "matai." He is responsible for the entire household, just as the high chief is responsible for the village. Each matai meets with the other matai and forms a council for village affairs.

In olden times, Samoans believed in various good and evil spirits and had many superstitions, but today most of them have been forgotten, and the people attend the churches and schools established, and are interested in trade with other lands. They always welcome the ships coming into the lovely Pago Pago harbor.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall 3 is a bronze figure of a Samoan man, and in Hall F are many objects made and used by the Samoans. Notice especially the fine mats, tapa cloth and polished kava bowls and highly-carved ceremonial paddles.

Save your Museum Stories. You will find them useful for looking up things you may want to know.

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STEPHEN C. SIMMS, Director

MUSEUM STORIES FOR CHILDREN

Presented by

*The James Nelson and Anna Louise Raymond Foundation
for Public School and Children's Lectures*



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November 20, 1937

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

BLOW-GUNS AND THEIR USERS

The blow-gun, blow-tube, or blow-pipe is a weapon in the shape of a long tube for the shooting of arrows, darts or clay bullets. In some lands, it is merely a toy; in others, it is used for securing fish, birds and small animals. In only a few regions is it a weapon of warfare today.

Blow-guns vary in length from the two-foot blow-pipe of the Kikis of Assam, used for shooting rats, to blow-guns so long they must rest upon supports when in use. The common length is six to ten feet, but twenty-foot tubes are used.

The weapons may be single, double or triple barreled. The first kind is made from reeds or bamboos from which the pith has been removed, or from hard wood cylinders whose centers have been chiseled out with long rods, or burned out with hot irons. The double barreled form has one tube inside another with wax or gum between to keep the tubes from slipping. Where long guns are needed and materials are scarce, several sections are fitted together and bound with grass, cords, strips of rattan or membranes of animals.

The chief blow-gun users are found among the Indians of South America, the inhabitants of Malay and Borneo and some of the Philippine Islands. There are scattered groups elsewhere. For instance, the only people of Melanesia who use blow-guns are found in southern New Britain. Their tube is so long that the Museum had to disjoint it to get it into the case, and the arrows used with it are four feet long.

As with a boy's wad-shooter, it is the sudden release of compressed air from the lungs and mouth that sends the arrows, darts or clay bullets forward with force sufficient to hit a bird one hundred yards away. To hold the air at the bottom, or butt of the gun, it is necessary to completely close off a space a short distance above the opening. This is done by wrapping the darts with fluff, feathers, wild cotton, or other plant fibers, or by inserting the larger ends of the darts into paper, pith or wood cones. The wrapping of the darts is known as "feathering." The Iroquois Indians "feather" their blow-gun darts with thistle-down.

The arrows or darts usually are rather small, short and slender. Stiff grass stems, midribs of palms, bamboo and splinters are choice materials. The points must be carefully made. Acouti teeth or pirai jawbone knives are used by some South American hunters, and are frequently carried fastened to the quiver which holds the poisoned darts, tips down. Some darts carry triangular tips; some have metal

tips. Poisoned darts have the shaft cut just below the part that carries the poison, so the tip will break off in the flesh of the animal shot. The poison usually causes the heart action to stop, but does not injure the meat. The "curare" of the Guiana Indians and the "ipoh" of the Malaysians are the most rapid poisons used on blow-gun darts.

Sometimes, the blow-guns are very highly ornamented, and have separate mouth pieces that fit tightly into the butt of the gun; others have pieces shaped like half-spools that fit snugly over the butt. The Japanese make one that is like a tiny trumpet. It is inserted into the side of the blow-gun a few inches above the opening. After the dart has been pushed above this, the butt is tightly plugged. The darts are small slivers of wood set in paper cones to hold the breath that will send them far from the hunter. The blow-guns used are wound with many layers of heavy paper to make them absolutely air-tight.

The equipment of a blow-gun hunter includes quivers, containers for the poisons, gourds or boxes for the "feathering" materials, sharpeners and spatulas, and should the hunter use a spear-head lashed to the muzzle of the gun, as do the Dyaks of Borneo, then there must also be a spear-head cover.

As each part of the equipment takes time to make and decorate, the hunter is apt to be very proud of his blow-gun and to boast of its lightness and accuracy.

MARGARET M. CORNELL, Guide-lecturer

Note: Blow-guns, arrows, darts, quivers, poisons and containers may be seen in Halls 4, 9, A, E, G and H. Case 43, Hall G, has two blow-guns that belonged to the Sultan of Bandjermassin of Borneo. In Hall 3 is a full-size figure of a Semang pigmy with his blow-gun and quiver, and the head of a Sakai pigmy, the most famous of blow-gun makers. Case 6, in Hall 9, shows guns, jars of poisons and cures. Case 3, Hall H, has a Philippine blow-gun covered with carabao membrane and the carabao horn moulds for the shaping of clay bullets. Hall 4 shows an Iroquois gun "feathered" with thistle-down.

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CLIFFORD C. GREGG, Director

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FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

- CHICAGO

TERMITES

Imagine insects so delicate that the sunlight may kill them, yet capable of destroying wooden buildings. That is what termites have done in some countries.

There are over 1,200 different kinds of termites. They live in all hot countries and in most warm temperate countries. There are fifty-nine kinds found in the United States and many of them live in the states along the Gulf of Mexico.

Termites live in the earth, in wood, or in air-cooled homes that have thick walls of mud. Here the hot sunlight cannot reach them. So seldom do these insects go out into the light that only the kings and queens possess usable eyes. Sometimes termites are called "white ants." This is not correct.

The ancestors of termites were like cockroaches. They lived during the damp, warm Coal Age. In some ways termites and cockroaches of today are much alike. Fossil termites have been found in Colorado and in the amber mined in East Prussia. Crawling insects became entangled in sticky sap on tree trunks. As more sap dripped down over them, the insects were buried in the center of the drop of sap. Then as time passed the pine sap turned to amber.

Termitaries or termite nests are interesting. One kind of termite, living in Australia, builds its nest in a north-south direction. Thus the termitary is only a few feet thick but about eight feet long. The sun's rays cannot heat the house when it is built in this fashion. Some nests are shaped like large umbrellas with overhanging roofs to shed the rain. Termites that live around Chicago build no true nest. They merely hollow out galleries in logs, decaying trees or manufactured timber.

Inside the nests it is damp and cool. Thick walls keep out the heat. To insure fresh air, the termites air-condition their homes with air-shafts that provide a circulation. This is also true of the tunnels they build across the forest floor, or over stone foundations to reach the wood above.

Deep inside the termitary live the queen and king. When they were young and had wings they began the colony. There also live the workers who care for the young, repair the nest and serve the king and queen, and a third type of termite. This is the soldier. His duty is to protect the nest and he wears his weapons on his head.

At certain times, winged termites fly from the nests in great swarms. Many are eaten by dragonflies, toads and birds, but a few fall safely to the ground. Those who survive break off their wings and mate. When the eggs hatch the parents care for the nymphs or young termites until they are old enough to help their parents in caring for more babies. Baby termites look quite like their parents. They eat a great deal and grow by molting or shedding their skins every time their skins become too tight. After five to eight molts the nymphs become adults.

For several months the young queen continues to help in building the new home and caring for the nymphs. Then she retires from these duties. A special room is built for the king and queen and there they spend the rest of their lives. The queen continues to lay eggs and the workers care for the babies. Some older queens lay as many as 4,000 eggs a day and some queens live to be fifty years old.

Termites feed on the cellulose which is found in wood, leather and paper. So great is the damage caused by the hungry termites that in some countries wooden buildings are being replaced by stone or concrete. Termites that live in Chicago seem to relish telephone poles or wooden houses. They will even consider the paper and cardboard stored in publishing houses.

It is an interesting fact that termites have never been known to eat railroad ties. Since the ears of termites are on their legs they hear noises by feeling vibrations. Possibly they do not like the vibration caused by passing trains and so they avoid railroad ties.

Each year the damage done by termites in the United States is over \$40,000,000. The government has many men and women studying the termites and searching for some way to prevent such destruction.

MARIE B. PABST, Guide-lecturer

Note: In Hall 16 may be seen a Giant Anteater family from South America shown destroying a termite nest. In Hall 22 is the African Aardvark who feeds on termites and usually builds his home at the base of a termitary. There is a termite encased in a drop of amber in Hall 34.

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